

Security of Supply Assessment

Corbion annually performs a global security-of-supply assessment for its suppliers and raw materials, to evaluate risks in procurement, quality and food safety, and sustainability areas. In each area, specific criteria are ranked in order to gauge the risk of supply issues. The business impact of any supply issue is considered in determining the overall score (high, medium, or low) for each aspect of supply for a given raw material and/or supplier. For raw materials and supplier-raw material combinations determined to be high-risk, mitigation plans are developed.

Procurement

The risk score is determined by scoring each raw material on sourcing situation, lead time and price volatility. Combined with the business impact rating, raw materials are categorized into high, medium, and low procurement risk. For all high-risk raw materials, detailed mitigation plans are developed. Possible mitigation actions include the development of alternative suppliers, increased safety stock, and supplier back up production plans.

Topic	Definition
Sourcing situation	Single-sourced / multi-sourced / exclusive
Lead time	Lead time from order placement to order receipt
Price volatility	Calculation based on fluctuations of raw material pricing on quarterly basis
Business impact	Ranking assigned to a raw material based on profitability contribution

Quality

The risk score is determined by scoring each supplier-raw material combination on the topics described in the table below. Supplier-raw material combinations are categorized into high, medium and low quality risk. For all high risk supplier-raw material combinations, detailed mitigation plans are developed. Possible mitigation actions include higher frequency of tests and samplings, explore sourcing from other locations and/or to shorten the supply chain and on-site audits.

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Topic	Definition	Source/ basis for scoring
Historical incidents	Evaluate the global history of intentional deception using food for economic gain by supplier and/ or related to the raw material	HorizonScan™ Ingredient Risk Assessment System
Materials with ≥1 component country of origin	Evaluate components of the material if the country of origin has a history of perceived levels of public sector corruption	Scored using the Corruption Perception Index from Transparency International
Likelihood of adulteration based on availability of raw material	Determine the stability of the global market for the material being assessed	Resources such as FDA, USDA, USP and 3 rd party agencies based on material attributes
Marketplace availability of adulterants	Research the availability of adulterants to help assess the ability of a supplier to commit fraud based on the attributes of the material itself	Resources such as FDA, USDA, USP and 3 rd party agencies based on material attributes
Country of Origin of purchased raw material	Evaluate if the country of origin has a history of perceived levels of public sector corruption or supply that has not met Corbion quality and food safety specifications	Scored using the Corruption Perception Index from Transparency International
Complexity of supply chain	Assess how often physical ownership changes and whether transport and warehousing conditions allow for food adulteration	Based on number of touch points in the supply chain
Physical form	Use product information and pack size to determine the form of the material	Solid, liquid, bulk
Routine product testing	Determine what mitigation strategies have been implemented by the supplier or Corbion to reduce the risk of food fraud	Supplier testing or internal testing upon receipt

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Sustainability

The risk score is determined using data from the RepRisk Platform. RepRisk is an online platform that monitors the Environment, Social, and Governance (ESG) risk of companies, including our suppliers. In some instances, RepRisk data may not be available. In this case, the supplier-raw material combination is scored based on raw material country of origin using data from the SEDEX platform. If the raw material is derived from/contains a conflict mineral, or is included on the SIN list then the raw material is considered high risk, regardless of the RepRisk ESG score. For all high risk supplier-raw material combinations, detailed mitigation plans are developed. Possible mitigation actions include supplier engagement, additional traceability investigation, identification of alternative raw materials or suppliers and on site audits.

Topic	Definition/source
Environment	Climate change, GHG emissions, global pollution; local pollution; impacts on landscapes, ecosystems and biodiversity; overuse and wasting of resources; waste issues; and animal mistreatment.
Social	Community relations: human rights abuses and corporate complicity; impact on communities; local participation issues and social discrimination. Employee relations: Forced/child labor, freedom of association, discrimination in employment; occupational health and safety; poor employment conditions.
Governance	Corruption, bribery, extortion and money laundering; executive compensation issues; misleading communication; fraud; tax evasion; tax optimization; and anti-competitive practices.
Conflict minerals	This topic assesses the risk of negative impacts related to raw materials containing/derived from conflict minerals. The term "conflict minerals" is defined as columbite-tantalite, also known as coltan (from which tantalum is derived); cassiterite (tin); gold; wolframite (tungsten); or their derivatives; or any other mineral or its derivatives determined by the Secretary of State to be financing conflict in the Democratic Republic of the Congo or an adjoining country. If the raw material is derived from tin, tantalum, tungsten, cobalt and/or gold and/or contains tin, tantalum, tungsten, cobalt and/or gold it is by definition High Risk.
SIN List	SIN is an abbreviation for Substitute It Now. According to the non profit ChemSEC, chemicals on the SIN list are considered hazardous and should be removed as soon as possible as they pose a threat to human health and the environment. The SIN list can be accessed here: https://sinlist.chemsec.org/ If a raw material is included in the SIN list then its is considered High Risk.